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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,506	11/12/2003	Tetsuo Take	32307-198662	1163

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EXAMINER	
MERCADO, JULIAN A	
ART UNIT	PAPER NUMBER
1795	
MAIL DATE	DELIVERY MODE
10/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,506	TAKE, TETSUO	
	Examiner	Art Unit	
	JULIAN MERCADO	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 12-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 12-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5-20-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Remarks

This Office action is responsive to applicant's amendment filed on July 3, 2008.

Claims 1-6 and 12-35 are pending.

Claim Rejections - 35 USC § 112

The rejection of claims 1-6 and 12-35 under 35 U.S.C. 112, first paragraph has been withdrawn.

(new rejection)

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a second fuel cell stack to recycle unreacted hydrogen, does not reasonably provide enablement for this recycling to be between a first fuel cell stack and a second fuel cell stack. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicant's citation of page 40 lines 21-24 of the specification is noted. The cited portion recites that "the anode exhaust gas 72 containing unreacted hydrogen is completely recycled to the anode 6 and reused for power generation by the

polymer electrolyte fuel cell stack 9....". In Figure 3, the anode exhaust gas 72 is recycled back to the same anode within the same fuel cell stack; there is no recycling either shown or disclosed (absent of a citation by applicant to the contrary) that shows any sort of recycling between the first and second fuel cell stack. Note the feedback loop shown connecting the exhaust 72 with inlet 65.

(new rejection)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-6, 12-15 and 24-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the first fuel cell stack" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the second fuel cell stack" in line 18. There is insufficient antecedent basis for this limitation in the claim.

Claims 12-15 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim 4 recites the limitation "the first fuel cell stack" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the second fuel cell stack" in lines 17-18. There is insufficient antecedent basis for this limitation in the claim.

Claims 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim 5 recites the limitation "the first fuel cell stack" in line 15. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the second fuel cell stack" in lines 15-16. There is insufficient antecedent basis for this limitation in the claim.

Claims 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim 6 recites the limitation "the first fuel cell stack" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the second fuel cell stack" in line 17. There is insufficient antecedent basis for this limitation in the claim.

Claims 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu (U.S. Pat. 6,551,732 B1) in view of Morimoto et al. (U.S. Pat. 5,221,586).

The rejection is maintained for the reasons of record. Even with the prior 35 U.S.C. 112, first paragraph now withdrawn, the examiner maintains that in Xu the power generating means [3] is adjacent the reforming means [6] insofar as both being part of the integrated fuel cell system and are therefore not distant relative to each other, and given that there is the absence of anything of the same kind, e.g. another fuel cell or another reforming means, in between. As to the claimed reforming means whose temperature is maintained in a predetermined range, this limitation has not been given patentable weight which does not give breadth or structural scope to the reforming means. Notwithstanding, the examiner asserts that the temperature of the reformer in Xu is maintained within a predetermined range as the "temperature of the autothermal reformer..." is specifically disclosed as maintained to "keep the temperature...." Xu does so in order to increase the system's thermodynamic efficiency. See col. 3 line 64 et seq. Regarding the claimed anode exhaust gas containing unreacted hydrogen from the first fuel cell stack is supplied to the second fuel cell stack, notwithstanding the 35 U.S.C. 112, first and second paragraph rejections for this limitation (discussion above), this limitation has not been given patentable weight as it is drawn to a process-of-using feature which does not give breadth or structural scope to the reforming means.

Applicant's arguments filed with the present amendment have been fully considered, however they are not found persuasive. In response to applicant's assertions that Xu "teaches away from, such feature" [sic], the examiner incorporates by reference the entirety of the detailed reasons set forth in the December 1, 2006 Office action on page 5 as the basis for maintaining that Xu teaches a first power generating means for supplying waste heat and steam from power generation to the reforming means. In response to arguments directed towards Morimoto et al., it

appears to the examiner that these arguments have already been considered in the prior Office action. To this end, the examiner incorporates by reference the entirety of the detailed reasons set forth in the October 11, 2007 Office action on page 3 (last paragraph). The remaining arguments, e.g. that Xu does not teach a second power generating means, appear to also have been previously submitted and to this end, the examiner additionally maintains the detailed reasons in consideration of these same arguments as set forth on page 3 of the October 11, 2007 Office action.

Claims 3 and 6 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. as applied to claims 1, 2, 4, 5, 7 and 8 above, and further in view of Gagnon (U.S. Pat. 4,098,960).

Claims 12-19 and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. as applied to claims 1, 2, 4, 5, 7 and 8 above, and further in view of Scheffler et al. (U.S. Pat. 4,859,545).

Claims 20, 21-23 and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of Morimoto et al. and Gagnon as applied to claims 3, 6 and 9 above, and further in view of Scheffler et al. (U.S. Pat. 4,859,545).

The rejections when further in view of Gagnon and Scheffler et al. are maintained for the reasons of record. It is noted that arguments submitted for the tertiary references merely assert that these references fail to remedy alleged differences in Morimoto et al. from the claimed invention, herein maintained for the reasons set forth *supra*.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/Julian Mercado/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795